

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/12334

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A44C17/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A44C B23K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category ^a	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 637 244 A (EROKHIN ALEXANDER I) 10 June 1997 (1997-06-10) column 4, line 56 – column 5, line 25; claim 1; figures 1,3 -----	1,3-9
X	US 2002/018255 A1 (KIHARA NOBUHIRO) 14 February 2002 (2002-02-14) paragraphs '0007! – '0010!; figures 1,2 -----	2
X	US 5 190 024 A (SENA NAYAKE DAYA R) 2 March 1993 (1993-03-02) column 5, line 6 – line 25 -----	11-13
X	US 5 454 234 A (KARMELI DAVID D) 3 October 1995 (1995-10-03) column 2, line 3 – line 50; figures 1a,1b -----	11-13
		-/-



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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Date of the actual completion of the International search

2 July 2004

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 072 549 A (JOHNSTON HAROLD) 17 December 1991 (1991-12-17) column 1, line 23 - line 43 column 2, line 13 - line 62 -----	11-13
A	US 6 330 523 B1 (DIMSDALE JERRY ET AL) 11 December 2001 (2001-12-11) column 8, line 7 - column 9, line 17; figures 1,2,1a -----	11-13
A	US 5 552 992 A (HUNTER CHARLES R) 3 September 1996 (1996-09-03) the whole document -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/12334

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 5637244	A	10-06-1997	EP JP	0624421 A2 7136782 A		17-11-1994 30-05-1995
US 2002018255	A1	14-02-2002	JP	2001350395 A		21-12-2001
US 5190024	A	02-03-1993	AU AU CN EP IN JP WO ZA	630124 B2 4484189 A 1042685 A ,B 0561770 A1 174710 A1 4501685 T 9005624 A1 8908713 A		22-10-1992 12-06-1990 06-06-1990 29-09-1993 18-02-1995 26-03-1992 31-05-1990 26-09-1990
US 5454234	A	03-10-1995		NONE		
US 5072549	A	17-12-1991		NONE		
US 6330523	B1	11-12-2001	US US EP JP US US US US US US US US US US US CA WO	5988862 A 2002059042 A1 0895577 A2 2000509150 T 2003001835 A1 2002158870 A1 2002149585 A1 2002145607 A1 6473079 B1 6246468 B1 6420698 B1 2004051711 A1 2252409 A1 9740342 A2		23-11-1999 16-05-2002 10-02-1999 18-07-2000 02-01-2003 31-10-2002 17-10-2002 10-10-2002 29-10-2002 12-06-2001 16-07-2002 18-03-2004 30-10-1997 30-10-1997
US 5552992	A	03-09-1996	AU WO	3950395 A 9613787 A1		23-05-1996 09-05-1996